A
Dissertation
on
Acute Hydrocephalus Internus
By Willis Greene
of Georgia

Passed March 25th 1823

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The hurried life of a student of Medicine, who avails himself, of the rich stores of medical erudition, and practical experience, spread before him in the different lectures of the University, must necessarily preclude the leisure requisite to that research and reflection essential to the production of an original or experimental disserta-tion

In closing my medical attendance at this school, and ambitious of being clothed with its honours, the preparation of a thesis is rendered an indispensable condition by its regulations.

In obedience to this ~~decrit~~ law is this essay presented, not in the expectation that I can offer any novelty, but limiting my hopes and ambition that it may serve to convince the respected and learned arbiters of my professional capacities that I have not been an idle or inattentive attendant on their instruction

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discussed, in these pages is Acute Hydrocephalus Internus, a disease over which every practitioner has to deplore the unavailing and inadequate resources of his art.

Hydrocephalus early attracted the attention of Physicians. It is noticed in the writings of the early Greek and Latin authors, though until the time of Galen, the term was generally applied to designate serous effusions beneath the skin or under the pericranium.

It is however only in modern times, since pathology has been illustrated by post mortem examinations, that the precise nature of the disease has been clearly demonstrated, and it may with propriety be considered as a modern discovery. By some writers, it has been proposed to remove Hydrocephalus from the class of dropsies, and to arrange it among the Phlegmasiæ or Pyrexiæ. There is no solid ground for separating it from the other forms of dropsical affections. In fact

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all the analogies of Hydrocephalus, with the other forms of dropsy, prove them to be similar affections. Like the dropsies, too, of the other cavities of the body, the effusion of Hydrocephalus is poured out by the capillaries of a serous membrane, for the Tunica Arachnoides is regarded by modern anatomists as a serous membrane, exhaling a fluid that lubricates the exterior surface and internal cavities of the brain.

Hydrocephalus may be considered as acute and chronic, idiopathic or sympathetic. The greater proportion of cases that occur are acute, and proceed from an inflammation, of the Tunica Arachnoides, idiopathically or sympathetically affected and terminating in serous effusion. Acute sympathic Hydrocephalus, resulting from many different diseases, is the most common form in which this affection exists. We find it consecutive of some eruptive and other fevers, to be excited by some of the abdominal ~~Congestions~~ congestions by derangement of the digestive organs, and by

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Hydrocephalus rarely attacks adults, but seizes on children as its victims. From birth until the second dentition is the period, during which it is usually displayed; and those individuals of a florid complexion, vigorous constitution subject or disposed to convulsions, whose brothers or sisters have been its sufferers, are most obnoxious to this cruel malady.

Besides the causes already stated as giving rise to Hydrocephalus by sympathic irritations we may enumerate in addition, and as those that properly occasion it idiopathically, blows on the head or violent concussions, affecting the brain, sudden terror, violent paroxysms of anger, the suppression of customary evacuations — as nasal Hemorrhage, the matter of crusta Lactea, and the sudden suppression of transpiration of the head, which in many children is very great.

Various and opposite opinions have been suggested

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by different writers with respect to the proximate cause of Hydrocephalus. Dr Darwin attributed the disease to a torpor of the absorbing vessels of the brain; Dr Whytt considered the effusion to be the result of a debilitated state of the exhalents; while those who regarded it as proceeding from inflammation as Beddoes Withering, and Rush, ~~assigned~~ to a general inflammation of the brain and its membranes, Dr Rush considered Hydrocephalus, in its first stage as a less degree of that inflammation producing phrenitis, and its second, as a less degree of that effusion which is productive of serous apoplexy. I have already stated that modern anatomists, adopting the doctrine of Bichat, class the Tunica Arachnoides among the serous membranes, lining the other cavities of the body. Inflammation of this membrane as inflammation of the Pleura and Peritoneum, occasions an increase of its serous exhalation, and as inflammation and increased exhalation of these membranes respectively constitute Hydrothorax and ascites, so does the inflammation and

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augmented exhalation of the Tunica Arachnoides constitute Hydrocephalus Internus.

Having thus sketched the history, enumerated the causes, and stated the nature of Hydrocephalus, I proceed to a consideration of its symptoms and treatment.

Acute Hydrocephalus ~~Hydrocephalus~~ Internus, is attended with fever, often not violent, extremely irregular in its paroxysms, having momentary exacerbations and intermissions; severe constant and violent headache attends it, exasperated by noise or light, and compells the little sufferer to utter loud screams, deep groans or incessant moanings, with constant complaints of the head which is frequently in a perpetual state of rotation. The veins of the head are distended, and it imparts a hot burning sensation to the hand. When too young to speak, the hands are frequently carried to the head, but not to any one part of it, and less to the cranium than to the face

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eyes, nose, and mouth, with an effort at picking as though endeavouring to pluck away something that incommodes. This symptom is gene=rally believed an indication of worms, but it belongs to cephalic irritation, whether it is sym=pathic, as it frequently is, from gastric or intes=tinal irritation or idiopathic

The pulse partakes of the variable character of this fever, sometimes frequent and irregular, intermittent, or natural, or slower than natural, especially towards the close of the disease, when it is always more feeble, and oftentimes more so on one side than the other.

The tongue is mostly clean or but slightly furred; the epigastric region is tender and painful, nausea and vomiting are rarely absent and these gastric affections alternate with the headache; being least troublesome when that is most severe. Obstinate costiveness commonly attends throughout the course of the disorder, not to be overcome

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in some cases by the most drastic cathartics. Infants at the breast are however occasionally affected with a diarrhea, when the stools are extremely fœtid dark or yellowish, becoming green when exposed to the air. The urine is scanty, depositing, generally a whitish mucilaginous matter or which is suspended in a liquid under the form of small whitish grains.

In the array of symptoms, that announce the existence of Hydrocephalus, always subject to great diversity, the eyes of the patient present a peculiar character, and very distinguishing feature of the disease. In its commencement, they are affected with extreme sensibility, which renders the light painful and sometimes they are highly inflamed.

When the patient is heavy with sleep, they are seen to roll under the eyelids that are mostly but half closed. Generally the eyes are drawn convulsively upwards, so that when the lids are kept asunder by the fingers, the

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under portion of the cornea can alone be seen. As the disease advances Strabismus either of one or both eyes, supervenes, and a peculiar oscillation of the pupil on the admission of light, that has been considered, by some as diagnostic of acute Hydrocephalus, but which is not constantly to be met with. The eyes in this state have an expression quite peculiar to the Hydrocephalic Physiognomy, and which is to be remarked in the intervals of calm that succeed to the painful crises of the head, and convulsions. It is a fixedness that seems to belong to extasy, or the expression of profound sentiment of interior contentment.

At this period, the violence of the sufferings of the patient, seem to mitigate, the disturbed flush and incessant restlessness which existed at first, now yield to a dull and lethargic torpor and with grinding of the teeth, the strabismus and dilated pupil are increased, and the

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eye has lost its sensibility to the light; vomiting no longer distresses the patient, but whatever is given to him is greedily swallowed. At last arive all the other symptoms of cerebral effusion, and compression. The lethargy becomes more profound, convulsions rack the frame, the breathing is deep and sterterous, the pulse becomes equal but quick and weak scarcely to be counted; Hemiplegia, eyes projecting from their orbits conjunctiva injected, sudden tumefaction of the face, which is partially moistened with sweat, are usually displayed, which is an apoplectic state, which terminates the scene

Such is the train of formidable ~~formidable~~ symptoms that usually attend on Hydrocephalus Internus. Their progress and developement are, however, extremely irregular. It hapens at times that most of them are absent, and the disease assumes so insidious a character, that practitioners of great skill

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and considerable experience have never suspected the true nature of the disease, until the fatal symptoms of the last stage have been suddenly developed. Again, an intermittence of all the alarming symptoms will occur, and the patient though touching the last limit of existence will appear to be rapidly returning to a state of health. The stupor will disappear the symptoms of effusion will vanish, the febrile paroxysms will cease; the infant will become cheerful, take nourishment, and carry his head erect, and no longer present a vestige of disease; the most flattering hopes animate the parents, and the physician deluded by the apparent solution of the disease prognosticates a recovery. But suddenly the bright prospect is overcast, the symptoms of effusion return with frightful rapidity and convulsions hasten the fatal termination of the disease.--

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The duration of the disease is rendered variable by the great variation in the progress, and intensity of the symptoms. It seldom is protracted beyond the fourth or terminates before the commencement of the second week. The more violent the headache and the sooner the Strabismus appears the shor=ter is its course

Treatment. Two principle indications govern our practice in the management of Hydrocephalus Internus. The first is to abate central irritation, in order to prevent effusion, and the second is to remove the effusion when it has taken place

To fulfil the first indication, recourse should be had to venesection which should be copious, at the same time local detraction of blood should be practised, by means of leeches and cups. If the head be warm, ice should be applied, the hair

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having been previously removed, and the feet should be immersed in warm water rendered irritating by mustard or pepper. Blisters covering the whole of the scalp are also to be repeatedly applied so as to maintain a constant irritation on the exterior surface and considerable discharge of serous fluid

Active purging is to be steadily adhered to. For this purpose calomel, either alone or in combination with the drastic cathartics, as Jalap, Cream Tartar, and Gamboge, is to be preferred. Purgative injections are also of great utility, and should not be neglected, they present great advantages, as the extreme irritability of the stomach, causes most of the purgatives, administered by the mouth, to be rejected. In general the purgative medicines should be given in double the doses usually administered on account of the inertness of the prima via in this disease. When however there is great

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hardness and tenderness of the abdomen, the power=ful purgatives may prove injurious; and in these cases, fomentations and a semicupium are to be premised

The constant nausea and vomiting are distressing symptoms, that interfere with the administration of Medicines, and require attention; though our remedies are seldom successful in removing them. Dr Fothergill advises Tinctura Thebaica to be given with this view; but its employment we believe to be injurious, Antispasmodics applied externally, to the epigastric region are said to be sometimes successful.

The second indication in the treatment of Hydrocephalus is to dissipate the effusion when it has occured, and which may be pursued simultaneously with the first. Mercury has been advised by Drs Percival and Dobson, with great confidence, administered internally and in the form of unction, so as to affect

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the salivary glands. Experience has not justified the great encomiums, passed on this medicine by those gentlemen, but from its power of exciting the absorbent system, it should not be omitted. The preparations of Squills should be combined with the administration of Mercury, to procure a diuretic effect or action

Errhines have been advised to keep up a constant discharge from the nostrils. The flowers of Arnica and Macaba snuff have been recommended for this purpose.—

The preceding methodus medendi appears to me best suited to the treatment of Acute Hydrocephalus Internus; but it is only in the forming stage of the disease that we can flatter ourselves with a prospect, by pressing it with rigour, that we shall have the satisfaction of rescuing our patient from a premature grave.

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